Catalog Description: This course involves the application of inquiry-based science learning processes to the student’s real-life context or situations. Only students in the On-Line Masters Program in Teaching and Learning in Elementary Education may enroll in this course. Prerequisite: Successful completion of the program’s core courses. (3)

Course Description: This course will help students identify various global and local issues. Students will choose one of the issues, formulate an authentic research question and carry out the investigation using various scientific processes. They will then communicate their results to other people thought either poster sessions or online bulletin board discussions.

Rationale: National Science Education Standards (NSES) emphasizes the importance of using inquiry as well as field-based teaching approaches in teacher education programs. The NSES document also suggests that students do science in the way scientists do. This course follows the NSES guidelines by providing teachers the opportunity to learn and apply inquiry and problem solving approaches. In this course teachers will learn and apply scientific inquiry skills to carry out a research project tied to the student’s real-life context. These practices will help teachers to implement similar projects in their own classrooms in the future.

Credit Hours: 3

Prerequisites: Successful completion of the program’s core courses.

Course Objectives:
The student will:
A. identify various local and global problems.
B. choose one issue for research.
C. formulate an authentic research question.
D. design and conduct research to investigate the student’s own questions.
E. collect, organize, and analyze data.
F. communicate their research results to others.

Course Content: This course was developed in an outcomes-based format and was designed to conform to the 45 contact hour expectation common for three credit hour courses. The specific course content, outlined in the course objectives, will be delineated by the instructional design team and the instructor of record.
1) Research methods, both qualitative and quantitative.
2) Field-based inquiry and problem-solving strategies.
3) Identification of various issues-global and local.
4) Carry out an independent research project on one of the local and global issues to determine the causes, and effects or the degree to which a hypothesis is supported or rejected. They will collect data in the field or laboratory and analyze it.
5) Report on the results.

Methods of Instruction: E-mail, Chat, search, document sharing, journals, weblibliographies, threaded discussions, online assessments, presentations of results, interactive assignments and activities.

Portfolio Requirement: A portfolio module will be developed to give evidence of competencies addressed in this class. Possible suggestions for the portfolio module for this course are:
1) Practicing how to frame research questions.
2) Identifying projects from internet resources.
3) Initial draft of research questions, design, and instrument.
4) Elaborate research report emphasizing the ongoing processes of the research project (40% of grade)

Research Component: The students will research instructional strategies that best meet the identified needs.

Grading Policy: Specifics to be determined by the instructional design team and the instructor of record
- Devising research questions 20%
- Creating online projects 20%
- Research project 20%
- Research report 30%
- Threaded discussion participation 10%

Course Schedule: To be determined by the instructional design team and the instructor of record.

Textbooks (Title, author, ISBN): Selected by the instructional design team and the instructor of record.

Library Review: A review of literature will be required to support the action research project.

Other Required Software, Materials and Equipment: Additional materials may be selected by the instructional design team and the instructor of record.

Statement on Non-Discrimination: Missouri’s public universities are equal-opportunity educational institutions and do not discriminate on the basis of race, color, national or ethnic origin, religion, sex, or sexual orientation for programs, activities, or employment, in accordance with the Civil rights Act of 1964 and Title IX of the Educational Amendments.
**Statement on Academic Honesty:** Missouri’s public universities are committed to intellectual integrity in their academic pursuits. Academic dishonesty constitutes unacceptable behavior and includes unauthorized assistance in completing required course assignments or testing. Unauthorized assistance includes electronic transfer. Plagiarism, that is, submitting someone else’s work or part there of, as your own, is considered to be cheating.

Breaches of intellectual integrity will result in disciplinary measures, based on the policies and procedures of the student’s home institution. These may include:
1) a failing grade for a particular assignment,
2) a failing grade for the course;
3) suspension for various lengths of time from the university, and/or
4) permanent expulsion from the university.

**Statement on Student Disabilities:** Reasonable accommodations will be provided upon request for persons with disabilities in accordance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act of 1990. If you are a person with a disability, either learning related or physical, who requires an accommodation to participate in university programs, services, or activities please contact the disability services staff at your university of record.

**Expected Enrollment:** 20-25

**Special Fees:** None

**Bibliography:**